

### REMARKS

Claims 7-18 are presented for examination, of which claim 7 is independent. Claims 1-6 and 19 have been cancelled without prejudice or disclaimer.<sup>1</sup> Favorable reconsideration and further examination are respectfully requested.

The cancellation of claims 1-6 and 19 obviates the rejection of these claims.

The Examiner rejected claims 3-18 under 35 U.S.C. § 103(a) as being unpatentable over Kodama et al., U.S. Patent No. 6,911,893 ("Kodama"), as applied in a rejection of claim 1, and further in view of Ito et al., U.S. Patent No. 6,522,237 ("Ito"). Claims 3-6 have been cancelled.

Claim 7 recites:

7. (Currently Amended) A method of manufacturing an electrical component having a positive temperature coefficient, the electrical component comprising:

(a) a base comprised of ceramic layers and electrode layers, the electrode layers separating adjacent ceramic layers, the ceramic layers comprising a ceramic material that has a positive temperature coefficient in at least one part of an R/T characteristic curve, and (b) a first collector electrode attached to a first side of the electrical component and a second collector electrode attached to a second side of the electrical component, wherein the first collector electrode and the second collector electrode contact alternate electrode layers, wherein the electrical component has a volume V and a resistance R, the resistance R being measured between collector electrodes at a temperature of between 0° C and 40° C, and wherein  $V \cdot R < 600 \Omega \cdot \text{mm}^3$ ,

wherein the method comprises:

forming the base using ceramic green sheets interspersed with the electrode layers, the ceramic green sheets comprising the ceramic layers that comprise the ceramic material that has the positive temperature coefficient in the at least one part of the R/T characteristic curve; and

removing a binder from, and sintering, the base in an environment having an oxygen content, wherein the oxygen content of the environment [[that]] is lower than an oxygen content of air.

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<sup>1</sup> Applicants reserve the right to pursue these claims in a continuation application.

Claim 7 recites, *inter alia*, removing a binder from, *and* sintering, the base in an environment having an oxygen content, wherein the oxygen content of the environment is lower than an oxygen content of air.

Turning to the applied art, Kodama does not disclose or render obvious the foregoing features of independent claim 7. As the Examiner acknowledges, Kodama does not disclose “removing a binder in an environment having oxygen content that is lower than an oxygen content of the air”.<sup>2</sup>

Ito was cited to make up for the foregoing deficiency of Kodama. In this regard, Ito discloses a method for forming an *electrode* that includes a base layer and a sintered layer formed on the base layer.<sup>3</sup> Ito discloses an electrode for a PTC thermistor in which a “sintered layer 12 is formed by sintering a conductive power... [and] is formed on at least one principal surface of the base layer 11.”<sup>4</sup> In another embodiment, “an example of a method for producing the electrode for a PTC thermistor”, Ito also discloses that a conductive paste 62 applied to the base layer 11 is fired to form the sinter layer 12 (after removal of the binder).<sup>5</sup> Thus, sintering is used to form the electrode.<sup>6</sup> Ito goes on to disclose an example of a PTC thermistor in which: “[i]n the electrodes 10, the sintered layers 12 are arranged so as to be in contact with the conductive polymer 81.”<sup>7</sup> This conductive polymer 81 “has the PTC characteristics.”<sup>8</sup> Thus, Ito discloses forming part of a PTC thermistor by arranging the conductive polymer 81 with PTC characteristics between already formed electrodes 10. Ito is not understood to disclose or render obvious performing binder removal or sintering once the electrodes have been formed. Thus, no sintering (or binder removal) is performed after the electrodes contact the conductive polymer 81 with the PTC characteristics.

In contrast, independent claim 7 recites forming a base, and *then* removing a binder from the [formed] base and sintering the [formed] base. The [formed] base *already* comprises

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<sup>2</sup> Office Action, mailed January 11, 2008, at p. 4.

<sup>3</sup> Ito, Abstract.

<sup>4</sup> *Id.*, col. 7, lines 4-7.

<sup>5</sup> *Id.*, col. 8, lines 36-38; col. 9, lines 10-24.

<sup>6</sup> *Id.*, e.g., col. 10, lines 1-3.

<sup>7</sup> *Id.*, col. 10, lines 20-22.

<sup>8</sup> *Id.*, col. 10, line 23.

electrode layers and, via ceramic green sheets and ceramic layers, a ceramic material that has a positive temperature coefficient (PTC) in at least one part of the R/T characteristic curve. Thus, Ito does not disclose or render obvious the foregoing features of independent claim 7.

Even if Kodama and Ito are combined, the result is not the subject matter covered by independent claim 7. Ito discloses a method for fabricating electrodes wherein the method includes sintering to form the electrode. Ito fails to disclose, e.g., removing a binder from, or sintering, the combined electrodes and conductive polymer (having PTC characteristics). On the other hand, Kodama discloses removing binders and sintering an alternating lamination of ceramic layers and internal electrodes. Kodama fails to disclose, e.g., removing a binder in an environment having an oxygen content wherein the oxygen content of the environment is *lower than* an oxygen content of air. Therefore, the combination of Kodama and Ito would not disclose or render obvious the subject matter of independent claim 7. Applicants therefore respectfully request reconsideration and withdrawal of this rejection.

Each of the dependent claims 8-18 is patentable for at least the same reasons as its corresponding independent claim, claim 7. Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

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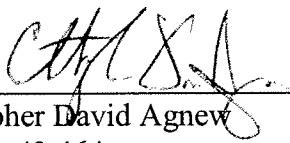
Attorney's Docket No.: 14219-068US1 / P2002,0291  
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Applicants believe the application is in condition for allowance, which action is respectfully requested.

Please apply any charges or credits to deposit account 06-1050, referencing attorney docket no. 14219-068US1.

Respectfully submitted,

Date: 4/10/08

  
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